

CLAIMS

1. A chucking apparatus in which a plurality of pawl bodies are provided in a radial direction of a hub body of a turntable such that said pawl bodies can move, and a center hole of a disk is pressed by said pawl bodies to hold said disk, wherein
said chucking apparatus comprises a resilient member for biasing said pawl bodies outward of said hub body,
each of said pawl bodies includes a pawl portion which comes into contact with said disk, and a pawl-side stopper for limiting outward movement of said pawl bodies caused by said resilient member,
said hub body includes a pawl opening through which said pawl portion can project outward, and a hub-side stopper which abuts against said pawl-side stopper,
a downward guide surface is provided at a location lower than a tip end of said pawl portion,
said hub body is provided with an upper receiving surface at a position opposed to said downward guide surface, and
said pawl portion is pressed from above so that said downward guide surface slides along said upper receiving surface and said pawl portion moves inward.
2. The chucking apparatus according to claim 1, wherein a surface extending downward from the tip end of said pawl portion is a disk holding surface, and said downward guide surface is provided on a side portion of said disk holding surface.
3. The chucking apparatus according to claim 2, wherein said pawl body is provided with said downward guide surface at a location higher than said disk holding surface or at a location of the same height as that of said disk holding surface.
4. The chucking apparatus according to claim 3, wherein an outer end of said upward guide surface is higher than said upward guide surface, and a portion of said downward guide

surface is provided on this portion.

5. The chucking apparatus according to claim 1, wherein said downward guide surface comprises at least a first inclined surface and a second inclined surface,

if said pawl portion is pressed from above by said disk, said first inclined surface is a surface against which said upper receiving surface abuts when a tip end of said pawl portion is inserted into a center hole of said disk or before the tip end of said pawl portion is inserted into the center hole of said disk, said second inclined surface is a surface against which said upper receiving surface abuts after the tip end of said pawl portion is inserted into the center hole of said disk, an angle formed between said second inclined surface and a pressing direction is smaller than an angle formed between said first inclined surface and the pressing direction.

6. The chucking apparatus according to claim 1, wherein an inner side guide surface comprising an inclined surface which gradually becomes higher toward a center of said hub body is provided on an inner side of said pawl body,

said inner side guide surface comprises at least a first inclined surface and a second inclined surface, if said pawl portion is pressed from above by said disk, said first inclined surface is a surface against which said pawl-side stopper abuts when a tip end of said pawl portion is inserted into a center hole of said disk or before the tip end is inserted into the center hole of said disk, said second inclined surface is a surface against which said pawl-side stopper abuts after the tip end of said pawl portion is inserted into the center hole of said disk, an angle formed between said second inclined surface and a pressing direction is smaller than an angle formed between said first inclined surface and the pressing direction.

7. The chucking apparatus according to claim 5, wherein said

first inclined surface of said downward guide surface is an arc surface, and said second inclined surface of said downward guide surface is a flat surface.

8. The chucking apparatus according to claim 1, wherein said upper receiving surface comprises at least a first inclined surface and a second inclined surface,

if said pawl portion is pressed from above by said disk, said first inclined surface is a surface against which said downward guide surface abuts when a tip end of said pawl portion is inserted into a center hole of said disk or before the tip end is inserted into the center hole of said disk, said second inclined surface is a surface against which said downward guide surface abuts after the tip end of said pawl portion is inserted into the center hole of said disk, an angle formed between said second inclined surface and a pressing direction is smaller than an angle formed between said first inclined surface and the pressing direction.

9. The chucking apparatus according to claim 1, wherein a surface extending downward from a tip end of said pawl portion is a disk holding surface, and said downward guide surface is provided on a side portion of said disk holding surface,

said pawl body is provided with said downward guide surface at a location higher than said disk holding surface or at a location of the same height as that of said disk holding surface, a downward receiving surface is provided on said hub body at a location opposed to said upward guide surface,

said pawl opening is provided in a range extending from an outer periphery of an upper surface of said hub body to its side surface, a side surface opening width of said side surface is greater than an upper surface opening width of said outer periphery of said upper surface of said pawl opening, said downward receiving surface is disposed on lower surfaces of both side portions of said upper surface opening, and said upper receiving surface is disposed on upper surfaces of both side

portions of said side surface opening.

10. The chucking apparatus according to claim 9, wherein said upper receiving surfaces provided on both sides of said side surface opening are connected to each other through said hub body, and said disk holding surface is disposed between said upper receiving surfaces.

11. The chucking apparatus according to claim 9, wherein a coil spring is used as said resilient member, and an abutment position between said pawl-side stopper and said hub-side stopper is lower than a center line of said coil spring.

12. The chucking apparatus according to claim 10, wherein an abutment position between said pawl-side stopper and said hub-side stopper is provided on an inner side of said pawl portion.

13. The chucking apparatus according to claim 10, wherein said pawl-side stopper is provided on a side of said pawl portion.

14. The chucking apparatus according to claim 9, wherein said pawl portion is moved outward and a position of said pawl portion becomes lower in a case where a thickness of said disk is thin in a recording/replaying state where said disk is held by said pawl portion, as compared with a case where said disk is thick.

15. The chucking apparatus according to claim 14, wherein an upward guide surface provided on a tip end side of said pawl portion and a downward receiving surface of said hub body provided at a position opposed to said upward guide surface are inclined such that their tip end sides are lower.

16. The chucking apparatus according to claim 9, wherein said pawl-side stopper for limiting outward the movement of said

pawl body caused by said resilient member is provided on a forward side from a contact portion with respect to a lower part of a lower end of said pawl body in a standby state where said disk is not held by said pawl portion, and said hub-side stopper which abuts against said pawl-side stopper has an inclined surface whose lower side is close to a tip end side.

17. The chucking apparatus according to claim 14, wherein a downward guide surface is provided at a position lower than a tip end of said pawl portion, said hub body is provided with an upper receiving surface at a position opposed to said downward guide surface, said downward guide surface comprises at least a first inclined surface and a second inclined surface, if said pawl portion is pressed from above by said disk, said first inclined surface is a surface against which said upper receiving surface abuts when a tip end of said pawl portion is inserted into a center hole of said disk or before said tip end of said pawl portion is inserted into said center hole of said disk, said second inclined surface is a surface against which said upper receiving surface abuts after said tip end of said pawl portion is inserted into said center hole of said disk, an angle formed between said second inclined surface and a pressing direction is smaller than an angle formed between said first inclined surface and the pressing direction, and said downward guide surface slides along said upper receiving surface and said pawl portion moves inward by pressing said pawl portion from above.

18. The chucking apparatus according to claim 14, wherein a coil spring is used as said resilient member, an abutment position between said pawl-side stopper and said hub-side stopper is lower than a center line of said coil spring and provided on the inner side than said pawl portion.

19. A disk apparatus using the chucking apparatus according to any one of claims 1 to 18, wherein said disk apparatus

comprises a chassis outer sheath including a base body and a lid, a front surface of said chassis outer sheath is formed with a disk inserting opening in which a disk is directly inserted, a traverse provided on said base body holds a spindle motor and a pickup, an upper surface of said spindle motor includes said turntable, and said traverse is moved toward and away from said base body.